This listing of claims will replace all prior versions of the claims in the application.

Listing of Claims:

1. (Previously Presented) An injection molding apparatus, comprising:

a) a runner component, wherein a melt conduit is defined at least in part by the runner component, wherein the runner component is positionable downstream from a melt source and upstream from a gate into a mold cavity defined in a mold block, wherein the melt conduit has a stagnation zone therein;

b) a valve pin extending into the melt conduit and movable to control melt flow from the melt cavity; and

c) a stagnation zone cleaner, wherein the stagnation zone cleaner is moveable independently of the valve pin through the stagnation zone to urge melt out of the stagnation zone.

2. (Previously Presented) The injection molding apparatus as defined in claim 1, wherein the stagnation zone is at least partially shielded by the valve pin.

3. (Previously Presented) The injection molding apparatus as defined in claim 1, wherein the valve pin is moveable between an open position and a closed position, wherein when in the open position the valve pin is spaced from the gate to permit melt flow into the mold cavity and when in the closed position the valve pin blocks the gate to impede melt flow into the mold cavity, and the injection molding apparatus further comprises a valve pin actuator for moving the valve pin between the open position and the closed position.

4. (Previously Presented) The injection molding apparatus as defined in claim 1, wherein the stagnation zone is located in a corner portion of the melt conduit at

which a flow of melt through the melt conduit changes directions.

5. (Previously Presented) The injection molding apparatus as defined in claim 4, wherein the melt conduit comprises an upstream portion upstream from the corner portion and extending in a first direction, and a downstream portion downstream from the corner portion and extending in a second direction different from the first direction; and the valve pin extends in the second direction into the downstream portion.

6. (Previously Presented) The injection molding apparatus as defined in claim 3, comprising a stagnation zone cleaner actuator for extending the stagnation zone cleaner in the melt conduit, wherein the stagnation zone cleaner actuator is operable independently of the valve pin actuator.

7. (Original) The injection molding apparatus as defined in claim 6, wherein the stagnation zone cleaner actuator comprises a pneumatically actuatable piston for advancing the stagnation zone cleaner into the melt conduit, and a spring for retracting the stagnation zone cleaner from the melt conduit.

8. (Previously Presented) The injection molding apparatus as defined in claim 6, wherein the stagnation zone cleaner has an actuation surface that is inclined for receiving a force from melt flow in the melt conduit and transferring the force into a retracting force for the stagnation zone cleaner.

9. (Previously Presented) The injection molding apparatus as defined in claim 1, wherein the stagnation zone cleaner has an aperture therethrough for slidably receiving the valve pin.

10. (Previously Presented) The injection molding apparatus as defined in claim 1,

wherein the stagnation zone cleaner is slidably engageable with the valve pin.

11. (Previously Presented) The injection molding apparatus as defined in claim 1, wherein the melt conduit is defined in part in a stationary runner component, in part in a moveable runner component that is positioned downstream from the stationary runner component and in part in a sprue bar assembly between the stationary runner component and the moveable runner component.

12. (Original) The injection molding apparatus as defined in claim 1, wherein the stagnation zone cleaner is moveable through the stagnation zone to urge melt out of the stagnation zone downstream.

Claims 13 to 19 (Cancelled)

20. (Original) An injection molding apparatus, comprising:

a) a manifold defining a plurality of runners, wherein the plurality of runners are in fluid communication with a manifold inlet, and wherein each of the runners has an outlet, and wherein the manifold is positionable so that the manifold inlet is downstream from a melt source, and wherein each runner includes a corner portion prior to each outlet, wherein the corner portion is configured to convey the melt through a non-zero angle, wherein each runner includes an outlet portion that extends generally linearly between the corner portion and the outlet;

b) a plurality of nozzles, each nozzle including a nozzle melt channel, wherein each nozzle melt channel is positioned downstream from the outlet portion of one of the runners and upstream from a gate into a mold cavity defined in a mold block;

c) a plurality of gating systems, wherein each gating system includes a valve pin and a valve pin actuator, wherein each valve pin extends into the outlet portion of one of the runners and into the nozzle melt channel of one of the nozzles and wherein the valve pin is movable between an open position wherein the valve pin is

spaced from the gate, and a closed position wherein the valve pin prevents melt flow to the mold cavity; and

d) a plurality of stagnation zone cleaners, wherein each stagnation zone cleaner is movable independently of the valve pin, between a retracted position wherein the stagnation zone cleaner is retracted from the runner, and an advanced position wherein the stagnation zone cleaner extends into a portion of the runner shielded by the valve pin from melt flow upstream from the valve pin.

21. (Original) An injection molding apparatus as claimed in claim 20, wherein the corner portion is configured to convey the melt through an angle of approximately 90 degrees.

22. (Original) An injection molding apparatus as claimed in claim 20, wherein the stagnation zone cleaner at least partially surrounds the valve pin.

23. (Original) An injection molding apparatus as claimed in claim 20, wherein the stagnation includes an aperture therethrough, and wherein the valve pin is slidingly received in the aperture.

24. (Original) An injection molding apparatus as claimed in claim 20, wherein the nozzle melt channel extends generally linearly and is positioned in alignment with the outlet portion of one of the runners and upstream from a gate into a mold cavity defined in a mold block.

25. (Original) An injection molding apparatus as claimed in claim 20, wherein in the closed position the valve pin cooperates with the gate to prevent melt flow through the gate.

26. (Previously Presented) An injection molding apparatus according to claim 8 wherein the stagnation zone is located at a corner portion of the melt conduit where the melt flow changes direction, the inclined actuation surface being arranged to face melt flow entering the corner portion and direct the melt flow downstream.

27. (Previously Presented) An injection molding apparatus according to claim 1 wherein the stagnation zone is located at a corner portion of the melt conduit where the melt flow changes direction and the stagnation zone cleaner has an actuation surface that defines part of a flow path through the melt conduit at the corner portion.

28. (Previously Presented) An injection molding apparatus according to claim 27 wherein the stagnation zone cleaner is movable from a retracted position to an advanced cleaning position wherein in the advanced cleaning position the stagnation zone cleaner partially obstructs the flow path through the melt conduit at the corner portion.

29. (Previously Presented) An injection molding apparatus according to claim 27 wherein the actuation surface has an inclined surface facing melt flow entering the corner portion such that the melt flow passing through the corner portion applies a force for moving the stagnation zone cleaner towards its retracted position.

30. (Previously Presented) An injection molding apparatus, comprising:

a manifold defining a melt conduit having an inlet and an outlet, the melt conduit having a corner portion downstream of the inlet and upstream of the outlet relative to melt flow through the melt conduit, wherein the corner portion is changes a direction of melt flow through the melt conduit,

a nozzle including a nozzle melt conduit positioned downstream from the outlet of the melt conduit and upstream from a gate into a mold cavity defined in a mold block;

a valve pin and a valve pin actuator, wherein the valve pin extends through the outlet of the melt conduit and into the nozzle melt conduit of one of the nozzle and wherein the valve pin is movable between an open position wherein the valve pin is spaced from the gate, and a closed position wherein the valve pin prevents melt flow to the mold cavity; and

a stagnation zone cleaner and stagnation zone cleaner actuator, the stagnation zone cleaner being movable independently of the valve pin by the stagnation zone actuator between a retracted position and an advanced position in which the stagnation zone cleaner extends into a portion of the melt conduit for urging melt out of the corner portion of the melt conduit.

31. (Previously Presented) An injection molding apparatus according to claim 30 wherein the stagnation zone cleaner has an actuation surface that defines part of the melt conduit at the corner portion both when the stagnation zone cleaner is in the retracted position and the advanced position.

32. (Previously Presented) An injection molding apparatus according to claim 31 wherein the actuation surface is inclined such that melt flow flowing from the melt conduit inlet to the melt conduit outlet through the corner portion applies force on the actuation surface for biasing the stagnation zone cleaner from the advanced position to the retracted position.

33. (Previously Presented) An injection molding apparatus according to claim 32 wherein the actuation surface defines a central opening through which the valve pin passes.

Claims 34 to 40 (Cancelled)